

Scientific and Technical Information Center

Requester's Full Name: William Howard Matthew Examiner #: 75879 Date: 1/3/01
 Art Unit: 574 Phone Number 305-0316 Serial Number: 09/481,730
 Mail Box and Bldg/Room Location: 2609 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: M-H-L and Systems for Providing Right and/or Left Heart Support During Cardiac Surg

Inventors (please provide full names): ~~Jonathan~~ Waleed Magib Abdul-Hassn
William Kanz

Earliest Priority Filing Date: 1/13/99

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

See claims 1-10 (Right side of heart)
 40-50 (Left side of heart)

Abstract

Also claims 20-23
 Circula
 pump

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>SEANNE HARRIGAN</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: <u>305-5934</u>	AA Sequence (#) _____	Dialog <u>✓</u>
Searcher Location: <u>HP2-2008</u>	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>1-7-02</u>	Bibliographic <u>✓</u>	Dr.Link _____
Date Completed: <u>1-7-02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>164</u>	Fulltext _____	Sequence Systems _____

January 7, 2002

TO: William Matthews, Art Unit 3738
FROM: Jeanne Horrigan, EIC-3700 *JH*
SUBJECT: Search Results for Serial #09/481730

CP2 - Room 2B08

Attached are the search results for "Methods and Systems for Providing Right and/or Left Heart Support During Cardiac Surgery," including results of an inventor search in foreign patent databases, and prior art searches in foreign patent and sci/tech/medical non-patent databases.

I assumed that the novelty of this invention was using a pump to keep blood flowing on one side of the heart during cardiac surgery. I tagged the items that seemed to me to be most relevant, *but I suggest that you review all of the results.*

I hope these results are useful. Please let me know if you would like me to expand or modify the search or if you have any questions.

Also attached is a "Search Results Feedback Form." Your feedback will help enhance our search services.

Serial 09/481730
Searcher: Jeanne Horrigan
January 7, 2002

1

File 350:Derwent WPIX 1963-2001/UD,UM &UP=200201
File 344:CHINESE PATENTS ABS APR 1985-2001/Oct
File 347:JAPIO OCT 1976-2001/Aug (UPDATED 011203)
File 371:French Patents 1961-2001/BOPI 200151

Set	Items	Description
S1	21	AU="ABOUL-HOSN W":AU="ABOUL-HOSN W N"
S2	16	AU="KANZ W":AU="KANZ W R"
S3	16	S1 AND S2
S4	135	BEATING()HEART
S5	4	S3 AND S4
S6	12	S3 NOT S5
S7	12	IDPAT (sorted in duplicate/non-duplicate order)
S8	12	IDPAT (primary/non-duplicate records only)
S9	5	S1:S2 NOT S3

5/TI/3 (Item 3 from file: 350)

DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.

Cannula apparatus with balloon tip for guiding cannula within patient's body, includes balloon inflatable via lumen, or tube in lumen in cannula, balloon acting as sail to facilitate placement of cannula

5/TI/4 (Item 4 from file: 350)

DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.

Method and apparatus for preventing air embolisms delivers fluid when negative pressure exists in anatomical cavity

5/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2002 Derwent Info Ltd. All rts. reserv.

014179124 **Image available**

WPI Acc No: 2001-663352/200176

Cannulation system and related methods augment the cardiac output of the heart during surgery

Patent Assignee: A-MED SYSTEMS INC (AMED-N)

Inventor: ABOUL-HOSN W N ; BAKER B; GUIDERA M; KANZ W ; KOSALEK K L; NOOR S; O'CONNELL D

Number of Countries: 094 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200183021	A1	20011108	WO 2001US13523	A	20010427	200176 B

Priority Applications (No Type Date): US 2000200812 P 20000428

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200183021	A1	E	65	A61M-037/00	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

Abstract (Basic): WO 200183021 A1

NOVELTY - A miniaturized centrifugal blood pump (24) has vascular cannula inlet (16) and outlet (18). The control console (22) is connected to the motor (20) and a flow probe (48). By selectively positioning the cannulas in the heart, blood can be removed from one area and returned to another to augment or replace the heart's beating.

USE - For cardiac surgery.
ADVANTAGE - Enhances the capability and versatility of beating heart surgery and avoids cardiopulmonary bypass.
DESCRIPTION OF DRAWING(S) - The diagram shows a perspective view of a cannulation system including a pump and cannula assembly communicatively coupled to a control console and motor assembly.

pp; 65 DwgNo 1/27

Derwent Class: P34

International Patent Class (Main): A61M-037/00

International Patent Class (Additional): A61M-031/00

5/7/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2002 Derwent Info Ltd. All rts. reserv.
014164616 **Image available**
WPI Acc No: 2001-648844/200174

Integrated pump and cannula system for transporting fluids between different locations within the body, especially for maintaining at least a partial blood flow through a protected path during heart surgery

Patent Assignee: A-MED SYSTEMS INC (AMED-N)

Inventor: ABOUL-HOSN W N ; CARTWRIGHT J W; KANZ W R ; MCCRYSTLE K J;
SHULOCK D

Number of Countries: 083 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200178807	A1	20011025	WO 2000US1095	A	20000114	200174 B

Priority Applications (No Type Date): WO 2000US1095 A 20000114

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200178807	A1	E	61	A61M-005/00	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

Abstract (Basic): WO 200178807 A1

NOVELTY - An integrated pump and cannula system (10) comprises a cannula (12) having main body (14), intermediate (16), and distal portions (18) bonded together to form a unitary element. Flow ports (24) in the intermediate portion and port (26) in the end of the distal region allow fluid to flow into and out of the distal portion. A blood pump (28) and motor (32) coupled by a drive shaft (34) are disposed within the main body portion of the cannula, and are connected to a control circuit (40) located near the proximal end (20) of the cannula. Power is supplied via cable (46). The apparatus provides a flow path between flow ports (24) and (26).

USE - For transporting fluid between different locations within a body cavity, especially for maintaining at least a partial blood flow through a protected flow path within the heart during surgery.

ADVANTAGE - Eliminates the need for cardiopulmonary bypass (CPB) during stopped heart or beating heart surgical procedures, maintaining blood flow and pulmonary activity throughout.

pp; 61 DwgNo 1/22

Derwent Class: P34

International Patent Class (Main): A61M-005/00

8/TI/1 (Item 1 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Heart stabilizer apparatus for heart bypass surgery

8/TI/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Intravascular blood pump system for use during heart transplantation, has guide mechanism for guiding intravascular blood pump and cannula to preset location within circulatory system of patient

8/TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Blood pump with supplemental port which may be used for outflow or inflow purposes

8/TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Cannula assembly for cardiac surgeries, has cannula which consists of tubular structure and processor which determines fluid flow rate based on pressure detected by transducer

8/TI/5 (Item 5 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Device and method of attaching a blood pump and tubes to a surgical retractor

8/TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Sealing cannula device for sealing incision while allowing access by medical instruments to e.g. body cavity, blood vessel

8/TI/8 (Item 8 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
A blood pump includes a reusable motor stator element enclosed in a disposable sterile housing, and completely encased by the pump housing, so the motor stator can be reused without sterilization

8/TI/9 (Item 9 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Centrifugal blood pump system with magnetic cable drive assembly for use in surgical procedures, has drive coupler with flexible power transmission unit, that extends between two individual magnetic couplers

8/TI/10 (Item 10 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Twin cannula for supporting cardiac surgery uses outer and inner cannulae to extract and return blood between different locations

8/TI/11 (Item 11 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Cannulation device used by doctor for access to interior body region of patient during heart surgery

8/7/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

Serial 09/481730
Searcher: Jeanne Horrigan
January 7, 2002

4

(c) 2002 Derwent Info Ltd. All rts. reserv.

013293520 **Image available**

WPI Acc No: 2000-465455/200040

Cannula system for cardiac support, has pumping assembly which sucks blood from right atrium and left atrium and ventricle and supplies it to pulmonary artery and aorta to provide right and left heart support

Patent Assignee: A-MED SYSTEMS INC (AMED-N)

Inventor: ABOUL-HOSN W N ; AKIN J; GUIDERA M; KANZ W R ; MATHENY R G

Number of Countries: 087 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200037139	A1	20000629	WO 99US30816	A	19991223	200040 B
AU 200024851	A	20000712	AU 200024851	A	19991223	200048

Priority Applications (No Type Date): US 98113771 P 19981223

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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WO 200037139	A1	E 47	A61N-001/362	
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Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200024851 A A61N-001/362 Based on patent WO 200037139

Abstract (Basic): WO 200037139 A1

NOVELTY - An outer cannula (14) with inlet (20) is placed within the right atrium of the heart, and an inner cannula (12) with an inlet (25) and atrial septum is placed within either the left atrium or ventricle of the heart. The pumping assembly withdraws blood from the right and left atrium and ventricle, and delivers it to the pulmonary artery and aorta, to provide respective right and left heart supports.

DETAILED DESCRIPTION - An inner cannula (12) is placed within an outer cannula (14) and an inlet (23) extends through the inlet (20) of outer cannula. Right and left heart supports are provided by a coupling pumping assembly with cannulas.

USE - For cardiac support.

ADVANTAGE - Eliminating the oxygenator and blood filter from the bypass circuit reduces hemolysis by minimizing the extent to which blood contacts foreign surfaces. Reduces the tubing which serves to lower the primary volume of the bypass circuit, which in turn lessens the amount of saline introduced into blood during a priming operation. Minimizing the amount of saline added to blood reduces the possibility that the patient will require a blood transfusion. By incorporating sensing devices within the cannula, eliminates further incision and devices from a bypass circuit thereby simplifying the circuit and reducing overall cost.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic view of the cannula system.

Cannulas (12,14)

Inlets (20,23,25)

pp; 47 DwgNo 1/19

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/362

8/7/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2002 Derwent Info Ltd. All rts. reserv.

012867447 **Image available**

WPI Acc No: 2000-039280/200003

Blood circulation support system for use during heart surgery

Patent Assignee: A-MED SYSTEMS INC (AMED-N)

Inventor: ABOUL-HOSN W N ; KANZ W R

Number of Countries: 081 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9959652	A1	19991125	WO 99US10871	A	19990517	200003 B
AU 9941894	A	19991206	AU 9941894	A	19990517	200019
EP 1082150	A1	20010314	EP 99925648	A	19990517	200116
			WO 99US10871	A	19990517	

Priority Applications (No Type Date): US 99231320 A 19990113; US 9879836 A 19980515

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9959652	A1	E	59	A61M-001/10	
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Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9941894	A		A61M-001/10	Based on patent WO 9959652
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EP 1082150	A1	E	A61M-001/10	Based on patent WO 9959652
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Designated States (Regional): DE FR GB

Abstract (Basic): WO 9959652 A1

NOVELTY - A cannula (120) provided with an inner conduit (121) and an outer conduit (123) is inserted into a heart chamber or blood vessel to transfer blood between two locations in the heart chamber or blood vessel by a pump (124). The priming volume of the loop consisting of the cannula and the pump is less than 1000 ml.

DETAILED DESCRIPTION - The length of the cannula may be adjusted so that the cannula is extended through a tricuspid valve and a pulmonary valve into a pulmonary artery. A controller may regulate the pump speed based on the measured blood pressure, blood oxygen level, blood carbon dioxide level and blood flow volume. A cradle may be provided to support the heart during the surgery.

INDEPENDENT CLAIMS are also included for a method for maintaining blood circulation through heart during surgery and for a kit of parts for use in beating heart bypass surgery.

USE - For use during heart surgery.

ADVANTAGE - Facilitates adequate blood flow through lungs without using any external blood oxygenation equipment or cardiopulmonary bypass. Provides optimal flow through vein, atrium and ventricle to prevent damage or collapse. Facilitates positioning of system near the heart to provide minimum priming volume. Adjusts pump speed with respect to measured blood pressure, blood oxygen level, blood flow, blood carbon dioxide level. Prevents linking, collapsing or undue restriction of blood flow through heart. Protects blood path from collapse. Provides additional space in chest cavity.

DESCRIPTION OF DRAWING(S) - The figure shows a sketch of the blood circulation system.

Cannula (120)

Conduits (121)

Outer conduit (123)
Pump (124)
pp; 59 DwgNo 1/6
Derwent Class: P34; S05; X25
International Patent Class (Main): A61M-001/10

9/TI/1 (Item 1 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Anatomical cavity access sealing conduit for gaining access to e.g. blood vessel has moving unit capable of selectively moving annular lip structure from retracted position to extended position

9/TI/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Hemostasis valve used during surgery, has sealing membrane assembly which is received within housing to maintain hemostasis during passage of surgical instrument into body cavity of patient

9/TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Blood pump for bypass surgeries, has sterilizable turbine drive unit coupled to impeller drive shaft through disc of magnetic coupling

9/TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Pump for transporting bodily fluid with inner and outer passageways - has rotor in housing rotatably fixed relative to it, forms inside compartment with inner walls round part of rotor defining inner region in communication with housing passageway, compartment and housing are cylindrical

9/TI/5 (Item 5 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
Sealing conduit for use with portal to enable instruments to be inserted into body during operations - has lip structure attached or formed on inside surface of cylindrical member and has penetrating member disposed inside cylindrical member

File 348:EUROPEAN PATENTS 1978-2001/DEC W02
File 349:PCT FULLTEXT 1983-2002/UB=20020103,UT=20011227

Set	Items	Description
S1	10	AU="ABOUL-HOSN WALID":AU="ABOUL-HOSN WALID NAJIB"
S2	25	AU="HOSN"
S3	23	AU="KANZ WILLIAM":AU="KANZ WILLIAM RUSSELL"
S4	23	S1:S2 AND S3
S5	23	IDPAT (sorted in duplicate/non-duplicate order)
S6	14	IDPAT (primary/non-duplicate records only)
S7	2	S1:S3 NOT S3

6/TI/4 (Item 4 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
SUPPLEMENTAL PORT FOR CATHETER PERFUSION OF SURGICAL SITE

6/TI/5 (Item 5 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.

PRESSURE SENSING CANNULA

6/TI/6 (Item 6 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
SEALING CANNULA DEVICE

6/TI/8 (Item 8 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
METHOD AND APPARATUS FOR PREVENTING AIR EMBOLISMS

6/TI/9 (Item 9 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
BLOOD PUMP SYSTEM WITH MAGNETIC CABLE DRIVE

6/TI/10 (Item 10 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
BLOOD PUMP WITH STERILE MOTOR HOUSING

6/TI/12 (Item 12 from file: 348)
DIALOG(R)File 348:(c) 2001 European Patent Office. All rts. reserv.
APPARATUS AND METHODS FOR ENTERING CAVITIES OF THE BODY

6/3,AB/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2001 European Patent Office. All rts. reserv.
01333081

CANNULATION SYSTEM AND RELATED METHODS
SYSTEME DE CANNULATION METHODES ASSOCIEES
PATENT ASSIGNEE:

A-Med Systems, Inc., (2693511), 2491 Boatman Avenue, West Sacramento, CA
95691-3817, (US), (Applicant designated States: all)

INVENTOR:

ABOUL- HOSN , Walid, N., 4625 Chicago Avenue, Fair Oaks, CA 95628, (US)
KANZ, William , 4695 Francis Court, Sacramento, CA 95822, (US)
BAKER, Bruce, 1146 Oro Loma Drive, Placerville, CA 95667, (US)
GUIDERA, Michael, 4601 Ladera Way, Carmichael, CA 95628, (US)
O'CONNELL, Desmond, 2731 N.E. 184th Place, Seattle, WA 98155, (US)
KOSALEK, Kim, L., 2640 Baybridge Court, Sacramento, CA 95833, (US)
NOOR, Sedig, 29980 Rancho California Road, Temecula, CA 92592, (US)
PATENT (CC, No, Kind, Date):

WO 200154749 010802
APPLICATION (CC, No, Date): EP 2001905066 010126; WO 2001US2531 010126
PRIORITY (CC, No, Date): US 178479 P 000127
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;
LU; MC; NL; PT; SE; TR
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: A61M-001/00
LANGUAGE (Publication,Procedural,Application): English; English; English

6/3,AB/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2001 European Patent Office. All rts. reserv.
01277420
GUIDABLE INTRAVASCULAR BLOOD PUMP AND RELATED METHODS
POMPE A SANG INTRAVASCULAIRE POUVANT ETRE GUIDEE ET PROCEDES S'Y RAPPORTANT
PATENT ASSIGNEE:

A-Med Systems, Inc., (2693511), 2491 Boatman Avenue, West Sacramento, CA 95691-3817, (US), (Applicant designated States: all)

INVENTOR:

ABOUL- HOSN , Walid, N., 4625 Chicago Avenue, Fair Oaks, CA 94628, (US)

KANZ, William, R. , 4695 Francis Court, Sacramento, CA 95822, (US)

BAKER, Bruce, 1146 Oro Lorna Drive, Placerville, CA 95667, (US)

PATENT (CC, No, Kind, Date):

WO 0117581 010315

APPLICATION (CC, No, Date): WO 961620 000901; WO 00US24515 000901

PRIORITY (CC, No, Date): US 152249 990903

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: A61M-001/00

LANGUAGE (Publication,Procedural,Application): English; English; English

6/3,AB/11 (Item 11 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2001 European Patent Office. All rts. reserv.

01144820

INTRAVASCULAR CANNULATION APPARATUS AND METHODS OF USE

VORRICHTUNG ZUM INTRAVASKULAREN ANBRINGEN EINER KANULE SOWIE ANWENDUNGSVERFAHREN

APPAREIL DE CANULATION INTRAVASCULAIRE ET SES METHODES D'UTILISATION

PATENT ASSIGNEE:

A-Med Systems, Inc., (2693510), 2491 Boatman Avenue, West Sacramento, CA 95691, (US), (Applicant designated States: all)

INVENTOR:

ABOUL- HOSN , Walid, N., 3462 Bridgeford Drive, Sacramento, CA 95834, (US)

KANZ, William, R. , 4695 Francis Court, Sacramento, CA 95822, (US)

LEGAL REPRESENTATIVE:

Dee, Ian Mark (78652), Eric Potter Clarkson, Park View House, 58 The Ropewalk, Nottingham NG1 5DD, (GB)

PATENT (CC, No, Kind, Date): EP 1105173 A2 010613 (Basic)

WO 200012148 000309

APPLICATION (CC, No, Date): EP 99943951 990827; WO 99US19537 990827

PRIORITY (CC, No, Date): US 98118 P 980827

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: A61M-003/00

NOTE: No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

7/6/1 (Item 1 from file: 348)

01154640

BLOOD PUMP WITH TURBINE DRIVE

7/3,AB/2 (Item 2 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2001 European Patent Office. All rts. reserv.

01020893

TRANSPORT PUMP AND ORGAN STABILIZATION APPARATUS INCLUDING RELATED METHODS

TRANSPORTPUMPE UND ORGANSTABILISATIONSVORRICHTUNG MIT ENTSPRECHENDEN VERFAHREN

POMPE DE TRANSPORT, APPAREIL DE STABILISATION D'ORGANES, ET PROCEDES MIS EN

OEUVRE
PATENT ASSIGNEE:
A-Med Systems, Inc., (2693510), 2491 Boatman Avenue, West Sacramento, CA
95691, (US), (Applicant designated States: all)
INVENTOR:
ABOUL- HOSN , Walid, 2491 Boatman Avenue, West Sacramento, CA 95961, (US
LEGAL REPRESENTATIVE:
Breese, Pierre et al (87181), Breese - Majerowicz 3, avenue de l'Opera,
75001 Paris, (FR)
PATENT (CC, No, Kind, Date): EP 993312 A1 000419 (Basic)
WO 9902204 990121
APPLICATION (CC, No, Date): EP 97910989 971014; WO 97US18674 971014
PRIORITY (CC, No, Date): US 891456 970711; US 933566 970919
DESIGNATED STATES: FR
INTERNATIONAL PATENT CLASS: A61M-001/10
NOTE: No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English

File 350:Derwent WPIX 1963-2001/UD,UM &UP=200201
File 344:CHINESE PATENTS ABS APR 1985-2001/Oct
File 347:JAPIO OCT 1976-2001/Aug(UPDATED 011203)
File 371:French Patents 1961-2001/BOPI 200151

Set	Items	Description
S1	135	BEATING()HEART
S2	431772	PUMP???
S3	893960	CONDUIT? ? OR STENT? ? OR CATHETER? ? OR TUBE? ? OR TUBING
S4	195892	LEFT AND RIGHT
S5	6	VENA()CAVA AND ATRIUM AND VENTRICLE AND PULMONARY()ARTERY
S6	21	ATRIUM AND VENTRICLE AND AORTA
S7	11	S1 AND S2
S8	4	S3 AND S7
S9	2	S4 AND S8
S10	0	S5:S6 AND S9
S11	2	S8 NOT S9
S12	7	S7 NOT S8

9/6,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
013203820

WPI Acc No: 2000-375693/200032

Title Terms: ISOLATE; HEART; PREPARATION; INVESTIGATE; HEART; COMPRISE;
EXCISION; HEART; DELIVER; DEVICE

Abstract (Basic):

... The invention is used in conjunction with investigations of
electrode leads, catheters , cardiac implants and other medical
devices in or on a beating heart . It is employed to investigate
heart functions or disfunctions, and also serves as a teaching...

Technology Focus:

... heart, and a physiologic parameter monitor coupled to the heart.
The delivering device has a right atrium chamber filling pump for
delivering the perfusate to right and left atria of the heart which
comprises a fluid column for providing preload pressure, and a left
atrium preload chamber comprising a fluid column for mimicking vascular
impedance...

... Stabilizes a beating heart and leaves sections of the heart without movement to allow rest...

12/6, TI, K/6 (Item 6 from file: 350)
DIALOG(R) File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
012063954

WPI Acc No: 1998-480865/199841

Device for holding coronary artery anastomosis site during bypass surgery - has open-bottomed rubber annulus which can be made to adhere to heart surface around anastomosis site, exposing and occluding coronary artery, by using suction pump

... adhere to heart surface around anastomosis site, exposing and occluding coronary artery, by using suction pump

...Abstract (Basic): open base (21). The chamber can be connected by a flexible hose (4) to a suction pump (P). In use, the chamber's base is placed on the surface of a beating heart so that the section of coronary artery intended for anastomosis is exposed in its centre (3). Activating the pump causes the chamber to adhere to the heart surface and the coronary artery to be...

...ADVANTAGE - The device improves the availability of minimally invasive coronary artery bypass surgery on a beating heart by allowing almost bloodless anastomosis of the coronary artery to be achieved using normal surgical...

12/6, TI, K/7 (Item 7 from file: 350)
DIALOG(R) File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
010410042

WPI Acc No: 1995-311390/199540

Surgically implantable reciprocating pump for pumping fluids such as blood - uses magnetic forces generated by coils to drive pump with two pivoting valve leaflets in central flow passage in unit suitable for implantation.

...Abstract (Basic): The pump has a reciprocating piston-valve assembly (1) consisting of an annular piston with a central...

...one direction only. The piston valve is driven by an internal cylinder (3) in the pump module (34) to displace fluid from the inlet to the outlet. A series of coils (12) drive the pump using magnetic forces ...

...The pump module is attached at its inlet end using a sewing cuff (4) to a patient...

...ADVANTAGE - Provides complete pumping which can keep a patient alive and can provide a limited assist interacting with a beating heart.

File 348:EUROPEAN PATENTS 1978-2001/DEC W02

File 349:PCT FULLTEXT 1983-2002/UB=20020103,UT=20011227

Set	Items	Description
S1	585	BEATING()HEART
S2	159762	PUMP???
S3	336766	CONDUIT? ? OR STENT? ? OR CATHETER? ? OR TUBE? ? OR TUBING
S4	145657	LEFT AND RIGHT
S5	237	VENA()CAVA AND ATRIUM AND VENTRICLE AND PULMONARY()ARTERY
S6	754	ATRIUM AND VENTRICLE AND AORTA
S7	272	S1 AND S2
S8	236	S3 AND S7
S9	171	S4 AND S8
S10	69	S5:S6 AND S9
S11	65	S8 NOT S9

Patent and Priority Information (Country, Number, Date):

Patent: WO 9738748 A2 19971023
Application: WO 97US6243 19970416 (PCT/WO US9706243)
Priority Application: US 96632883 19960416

Designated States: AU CA GB JP US AT BE CH DE DK ES FI FR GB GR IE IT LU MC
NL PT SE

Publication Language: English

Fulltext Word Count: 8450

English Abstract

Described is a closed chest intravascular catheter system for a simultaneous biventricular approach to: 1) intravascular cardiopulmonary surgery and 2) acute or prolonged mechanical circulatory support. The catheter system includes a left heart catheter and a right heart catheter with expandable members which segment the circulatory system into subcirculations of cardiopulmonary support. The left heart catheter has an elongated shaft with a first expandable member positioned at the entry site into a peripheral artery, a second expandable member positioned in the proximal descending aorta, a third expandable member positioned in the ascending aorta, and a fourth expandable member positioned within the left ventricle. The right heart catheter has an elongated shaft with a first expandable member positioned at the entry site into a vein, a second expandable member positioned within the right atrium, a third expandable member positioned within the coronary sinus, and a fourth expandable member positioned through the pulmonic valve. Alternatively, in a transseptal approach, the left or right heart catheter can be advanced across the atrial septum of the heart. Each catheter has a main lumen for insertion of an imaging system and robotic instruments into the chambers of the heart. Each catheter includes a flexible distal section with a removable guide for directing the catheter through the chambers of the heart and, optionally, a proximal limb branch with a fifth expandable member for perfusing or draining the peripheral vessel at the entry site.

File 155:MEDLINE(R) 1966-2002/JAN W2

File 144:Pascal 1973-2001/Dec W4

File 5:Biosis Previews(R) 1969-2001/Dec W5

File 6:NTIS 1964-2002/Jan W3

File 2:INSPEC 1969-2002/Jan W1

File 8:EI Compendex(R) 1970-2002/Jan W1

File 99:Wilson Appl. Sci & Tech Abs 1983-2001/Nov

File 65:Inside Conferences 1993-2002/Jan W1

File 77:Conference Papers Index 1973-2001/Nov

File 73:EMBASE 1974-2002/Dec W5

File 34:SciSearch(R) Cited Ref Sci 1990-2002/Jan W1

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

File 94:JICST-EPlus 1985-2002/Nov W4

File 35:Dissertation Abs Online 1861-2001/Dec

File 238:Abs. in New Tech & Eng. 1981-2001/Dec

Set	Items	Description
S1	4456	BEATING()HEART
S2	559286	PUMP???
S3	1236542	CONDUIT? ? OR STENT? ? OR CATHETER? ? OR TUBE? ? OR TUBING
S4	404470	LEFT AND RIGHT
S5	434	VENA()CAVA AND ATRIUM AND VENTRICLE AND PULMONARY()ARTERY
S6	2692	ATRIUM AND VENTRICLE AND AORTA

S7	806	S1 AND S2
S8	113	S3 AND S7
S9	15	S4 AND S8
S10	0	S5:S6 AND S9
S11	98	S8 NOT S9
S12	693	S7 NOT S8
S13	0	S8 AND S5:S6
S14	15	S9
S15	8	RD (unique items)
S16	6	S15/2001 OR S15/2000
S17	2	S15 NOT S16
S18	5254483	SURGERY OR SURGICAL
S19	585	S1(5N)S18
S20	35	S19 AND S2 AND S3
S21	35	S20 NOT S17
S22	19	RD (unique items)
S23	12	S22/2001 OR S22/2000
S24	7	S22 NOT S23
S25	8	S1 AND S5:S6
S26	6	S25 AND S18
S27	6	S26 NOT S24
S28	4	RD (unique items)

17/6,K/1 (Item 1 from file: 155)

DIALOG(R)File 155:

04875799 84166491 PMID: 6608638

Use of the pulmonary artery for left ventricular venting during cardiac operations.

Apr 1984

Data relating to the hemodynamic efficaciousness and mechanism of action of a pulmonary artery catheter or vent used for left ventricular venting during cardiac operations are presented. The pulmonary artery vent is a plastic sump catheter that is introduced into the main pulmonary artery through a purse-string suture and connected via a roller pump to the venous reservoir of the heart-lung perfusion machine. Placement and removal require only...

... minutes. The pulmonary artery vent retrieved 85% of a 99mtechnetium-labeled solution placed in the left atrium during aortic cross-clamping, and there was no detectable radioactivity in peripheral or aortic...

...bypass in 10 patients undergoing coronary artery bypass averaged 12.5 L. The effectiveness of left ventricular decompression was evaluated in 20 patients also undergoing bypass grafting. Use of the pulmonary artery vent consistently and significantly decreased left heart pressures, compared to the control situation with the vent off, with the aortic cross-clamp applied, and in **both the fibrillating and beating heart in the early postischemic reperfusion period**. We reached the following conclusions: (1) The pulmonary artery vent withdraws left heart blood via the pulmonary vasculature, in addition to returning right heart spillover and retrieving bronchial flow. (2) Left heart pressures are reduced to levels which reduce oxygen demands and preserve endocardial perfusion, therefore protecting myocardium, during fibrillation and during coronary reperfusion of the beating heart. (3) Because of its effectiveness and safety, especially the impossibility of introducing air into the left ventricle, the pulmonary artery vent is recommended for routine left ventricular venting.

17/6,K/2 (Item 1 from file: 34)

DIALOG(R)File 34:(c) 2002 Inst for Sci Info. All rts. reserv.

05255117 Genuine Article#: VK874 Number of References: 23

Title: VALIDATION OF RIGHT AND LEFT -VENTRICULAR CONDUCTANCE AND
ECHOCARDIOGRAPHY FOR CARDIAC-FUNCTION STUDIES (Abstract Available)

Abstract: Background. Continuous estimation of left ventricular volume from instantaneous conductance has compared favorably with 'gold standards,' is less labor intensive, and provides real-time data. Little information exists, however, correlating right ventricular conductance with such gold standards or examining the effects of an electrical field generated in the opposite ventricle.

Methods. In open-chested sheep, right and left ventricular conductance, two-dimensional echocardiography, and thermodilution cardiac outputs were measured at steady-state conditions...
... $r = 0.89$), postmortem pressure-volume relations ($r = 0.84$), and casts ($r = 0.85$). Left ventricular end-diastolic volume measured by conductance did not differ significantly from other standards by...
...affect measured conductance in the studied ventricle.

Conclusions. Conductance is useful for the measurement of right and left ventricular end-diastolic volumes in the beating heart and is not affected by the presence of an electrical field in the opposite ventricle...

24/6/1 (Item 1 from file: 155)
11527387 21174401 PMID: 11276468
Flow measurement in coronary surgery.
1999

24/6/2 (Item 2 from file: 155)
10349426 99430960 PMID: 10503635
Aortic balloon entrapment complicating intra-aortic balloon counterpulsation.
Sep-Oct 1999

24/6/3 (Item 3 from file: 155)
10268058 99396332 PMID: 10468256
Anesthetic management of patients undergoing coronary artery bypass grafting with the use of an axial flow pump and a short-acting beta-blocker.
Aug 1999

24/6/4 (Item 4 from file: 155)
10195778 99284136 PMID: 10357244
Hemodynamic properties of the hemopump HP14.
Mar 1999

24/6/7 (Item 1 from file: 34)
08130491 Genuine Article#: 249RJ Number of References: 9
Title: Current results in off pump surgery (ABSTRACT AVAILABLE)
Publication date: 19990900

24/7/5 (Item 5 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
09679737 98124235 PMID: 9464588
Perspectives on minimally invasive coronary artery surgery. Current assessment and future directions.
Mack MJ
Columbia Hospital Medical City Dallas, TX, USA.
International journal of cardiology (IRELAND) Dec 1 1997, 62 Suppl 1

pS73-9, ISSN 0167-5273 Journal Code: GQW

Languages: ENGLISH

Document type: Journal Article; Review; Review, Tutorial

Record type: Completed

Excellent long-term results have been obtained with conventional coronary artery bypass surgery. However, significant mortality and morbidity still exists due to the use of cardiopulmonary bypass for circulatory support and the traditional method of access by median sternotomy. Minimally invasive concepts have been adopted in cardiac surgery in an attempt to make these procedures less invasive. Minimally invasive alternatives include the minimally invasive direct coronary artery bypass procedure in which cardiopulmonary bypass is eliminated and the operation is performed through minimal access incisions; the Port Access approach in which the procedure is done through minimal access incisions and cardiopulmonary support is instituted through an extra thoracic approach. The third alternative is the "off pump" sternotomy approach which allows greater access for more extensive revascularization but the procedure is still performed on a **beating heart**. All procedures have their limitations, but offer the potential for a less invasive approach for coronary revascularization. Current results are only short to immediate term, but are promising. **Current efforts to extend the procedure include improved methods for facilitating beating heart coronary artery surgery**, better visualization for endoscopic approaches and finding alternatives to cardiopulmonary bypass for circulatory support and alternatives to suturing for performance of vascular anastomoses. Additional alternatives to extend the procedure include hybrid operations in which minimally invasive coronary bypass is combined with transcatheter procedures (stents) for the treatment of multivessel disease. (15 Refs.)

Record Date Created: 19980324

24/7/6 (Item 1 from file: 73)

DIALOG(R)File 73:EMBASE

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06933706 EMBASE No: 1997218205

Transient ventricular asystole using adenosine during minimally invasive and open sternotomy coronary artery bypass grafting

Robinson M.C.; Thielmeier K.A.; Hill B.B.

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Annals of Thoracic Surgery (ANN. THORAC. SURG.) (United States) 1997, 63/6 SUPPL. (S30-S34)

CODEN: ATHSA ISSN: 0003-4975

PUBLISHER ITEM IDENTIFIER: S0003497597004311

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 14

Background. The emergence of minimally invasive coronary artery bypass grafting and recent off-pump open sternotomy clinical reports have refocused attention on the technical aspects and outcome of grafting on the beating heart. Methods. To optimize the surgical field we report a method using adenosine for induction of controlled intervals of ventricular asystole to produce a transiently still cardiac field that facilitates anastomotic accuracy. Results. Adenosine was used in 57 patients, 31 included off-pump coronary artery bypass grafting (27 by minimally invasive technique, 4 by open sternotomy). In a further 26 patients adenosine pauses were used for suture placement to control anastomotic bleeding after cardiopulmonary bypass. Average adenosine boluses per

anastomosis were 9 (6-14), mean dose of adenosine per bolus (mg/kg) was 0.24 (0.15-0.35), mean duration of pause (seconds) was 6 (3-19), and mean time for arterial blood pressure (mean) to return to baseline (seconds) was 35 (13-48). Presence of repolarization arrhythmias was noted in 1 patient. There were no deaths. Two patients had recurrent myocardial ischemia shown on angiography to be the result of technical problems. Conclusions. This report describes our experience with the emerging procedure of minimally invasive coronary operations and off- pump grafting with the adenosine technique. The method also includes mechanical devices and other pharmacological therapy to optimize the surgical field, and the technique has now become a standard component of our off- pump revascularization methods.

28/6/1 (Item 1 from file: 155)
10646986 20331840 PMID: 10875585

Less invasive surgical treatment of renal cell carcinomas extending into the right heart and pulmonary arteries: surgery for renal cell carcinoma.
Sep-Oct 1999

28/6/2 (Item 1 from file: 73)
11195726 EMBASE No: 2001206360

The application of intraoperative intra-aortic balloon pump support for patients with impaired left ventricular systolic function undergoing beating heart coronary artery bypass grafting
2001

28/7/3 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.
07795236 EMBASE No: 1999277102

Management of cardiopulmonary bypass during minimally invasive cardiac surgery
Bao M.; Geng J.Y.; Guo B.
Dr. M. Bao, Department of Cardiothoracic Surgery, Bethune International Peace Hospital, Shijiazhuang, Hebei 050082 China
AUTHOR EMAIL: ctsgb@public.sj.he.cn
Asian Cardiovascular and Thoracic Annals (ASIAN CARDIOVASC. THORAC. ANN.) (Singapore) 1999, 7/2 (93-95)
CODEN: ACTAF ISSN: 0218-4923
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 9

From December 1996 to December 1997, 58 patients underwent minimally invasive cardiac surgery in our institute. The operations comprised to for atrial septal defect, 26 for ventricular septal defect, 15 for mitral stenosis and insufficiency, 4 for aortic valve insufficiency, 2 for left atrial myxoma, and 1 for right ventricular myxoma. There were 21 men and 37 women with a mean age of 20 years (range, 5 to 46 years) and a mean weight of 35 kg (range, 15 to 68 kg). To establish cardiopulmonary bypass, femorofemoral and superior vena caval cannulation or femoral artery and two-stage cannulation was used. **Normothermia with a beating heart or moderate hypothermia with aortic cross-clamping during cardiopulmonary bypass were employed.** All patients resumed sinus rhythm spontaneously, except for one who was easily defibrillated. There were no deaths or neurologic complications and no problems with the cannulation sites. We concluded that these techniques of cardiopulmonary bypass were feasible and safe.

S5 42 VENA()CAVA AND ATRIUM AND VENTRICLE AND PULMONARY()ARTERY
S6 145 ATRIUM AND VENTRICLE AND AORTA
S7 473 S1 AND S2
S8 150 S3 AND S7
S9 28 S4 AND S8
S10 2 S5:S6 AND S9
S11 122 S8 NOT S9
S12 323 S7 NOT S8
S13 569987 SURGERY OR SURGICAL
S14 930 S1(5N)S13
S15 13421 S2(S)S3
S16 16 S14 AND S15
S17 8 RD (unique items)
S18 8 Sort S17/ALL/PD,D
S19 877 S1(3N)S13
S20 316 S1()S13
S21 201 S20/2000 OR S20/2001
S22 7032446 PD=19990113:19991231
S23 82 S20 NOT S21:S22
S24 48 RD (unique items)
S25 48 Sort S24/ALL/PD,D
S26 47 S25 NOT S18

18/8/1 (Item 1 from file: 98)
DIALOG(R)File 98:(c) 2001 The HW Wilson Co. All rts. reserv.
04383302 H.W. WILSON RECORD NUMBER: BGSA00133302
Operating on a beating heart.
WORD COUNT: 4027
DESCRIPTORS: Cardiopulmonary bypass; Medical technology
Oct. 2000 (20001000)

18/8/2 (Item 2 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.
07544956 Supplier Number: 63267856 (USE FORMAT 7 FOR FULLTEXT)
Quest Medical.(Brief Article)
July, 2000
Word Count: 194
PUBLISHER NAME: American Health Consultants, Inc.
COMPANY NAMES: *Quest Medical Inc.
EVENT NAMES: *330 (Product information)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3840000 (Medical Instruments & Supplies)
INDUSTRY NAMES: BUSN (Any type of business); DRUG (Pharmaceuticals and
Cosmetics)
SIC CODES: 3840 (Medical Instruments and Supplies)
NAICS CODES: 3391 (Medical Equipment and Supplies Manufacturing)
TICKER SYMBOLS: QMED
SPECIAL FEATURES: INDUSTRY; COMPANY

18/8/3 (Item 3 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv..
07453563 Supplier Number: 62696517 (USE FORMAT 7 FOR FULLTEXT)
Atrion Corporation's Quest Medical Unit Receives FDA 510/k Approval for
Beating Heart Coronary Applications.
June 13, 2000
Word Count: 563

PUBLISHER NAME: Business Wire
COMPANY NAMES: *ATRION Corp.; Quest Medical Inc.
PRODUCT NAMES: *3840000 (Medical Instruments & Supplies); 4923000 (Gas Transmissn & Distributn)
INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)
SIC CODES: 3840 (Medical Instruments and Supplies); 4923 (Gas transmission and distribution)
NAICS CODES: 3391 (Medical Equipment and Supplies Manufacturing); 22121 (Natural Gas Distribution)
TICKER SYMBOLS: ATRI; QMED
SPECIAL FEATURES: LOB; INDUSTRY; COMPANY

18/8/4 (Item 4 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.
07417600 Supplier Number: 62205582 (USE FORMAT 7 FOR FULLTEXT)
ROBO-DOC!(Brief Article)
May 12, 2000
Word Count: 1498
PUBLISHER NAME: American City Business Journals, Inc.
EVENT NAMES: *361 (Services development)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3569490 (Robots NEC); 8000410 (Surgical Procedures)
INDUSTRY NAMES: BUSN (Any type of business); REG (Business, Regional)
SIC CODES: 3569 (General industrial machinery, not elsewhere classified); 8000 (HEALTH SERVICES)
NAICS CODES: 333999 (All Other Miscellaneous General Purpose Machinery Manufacturing); 62 (Health Care and Social Assistance)

18/8/5 (Item 5 from file: 98)
DIALOG(R)File 98:(c) 2001 The HW Wilson Co. All rts. reserv.
04358715 H.W. WILSON RECORD NUMBER: BGSA00108715 (USE FORMAT 7 FOR FULLTEXT)
Shrinking the surgeon.
WORD COUNT: 3374
DESCRIPTORS:
Surgical robots
Apr. 2000 (20000400)

18/8/6 (Item 6 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.
07233217 Supplier Number: 61533858 (USE FORMAT 7 FOR FULLTEXT)
Med-tech company signs key strategic alliance.(Brief Article)
March 17, 2000
Word Count: 876
PUBLISHER NAME: American City Business Journals, Inc.
COMPANY NAMES: *A-Med Systems Inc.; Baxter Healthcare Corp.
EVENT NAMES: *380 (Strategic alliances)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3842100 (Surgical Appliances & Supplies); 2830000 (Drugs & Pharmaceuticals)
INDUSTRY NAMES: BUSN (Any type of business); REG (Business, Regional)
SIC CODES: 3842 (Surgical appliances and supplies); 2830 (Drugs)
NAICS CODES: 339113 (Surgical Appliance and Supplies Manufacturing); 3254 (Pharmaceutical and Medicine Manufacturing)
TICKER SYMBOLS: BAX
SPECIAL FEATURES: INDUSTRY; COMPANY

18/8/7 (Item 7 from file: 148)
DIALOG(R)File 148:(c)2002 The Gale Group. All rts. reserv.
11854092 SUPPLIER NUMBER: 59948796 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Healing the Heart.(new bypass and angiography techniques)
March 13, 2000
WORD COUNT: 3717 LINE COUNT: 00289
DESCRIPTORS: Angiography--Innovations; Heart diseases--Diagnosis; Blood
cholesterol--Health aspects; Coronary artery bypass--Technique; Cardiac
patients--Care and treatment
GEOGRAPHIC CODES/NAMES: 1USA United States

18/3,AB,K/8 (Item 8 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)
(c) 2002 The Gale Group. All rts. reserv.
03950385 Supplier Number: 50285509
Day surgery's growth driven by advances in anesthesiology
The BBI Newsletter, v21, n7, pN/A
July 1, 1998
Language: English Record Type: Fulltext
Article Type: Article
Document Type: Newsletter; Trade
Word Count: 2561
TEXT:
...and trials are currently under way in Europe on its use in mini-mally
invasive, beating - heart surgery. Nitric oxide in congenital heart
disease Stefan Lundin, consultant anesthetist at the Sahlgrenska University
Hospital...
... sure wave calibrated by a simple arterial thermodilution
measurement. PiCCO uses a central venous catheter and an arterial access,
less invasive than the traditional pulmonary artery technique. Del Rocca...
...transplantation, liver trans-plantation and thoracic surgery, and found
results correlated well with pulmonary artery catheter measurements but
with a lower level of invasiveness. Doppler flowmetry monitoring
Interscalene brachial plexus...favorable effective results for
patient-controlled sedation using propofol and pre-programmed,
target-controlled infusion pumps. In both cases patient satisfaction was
recorded as high. A recent study by Gordon Hall...

26/6/7 (Item 2 from file: 16)
05400098 Supplier Number: 54115439 (USE FORMAT 7 FOR FULLTEXT)
Enable builds contacts with surgical precision.(Enable Medical Corp)
Sept 5, 1997
Word Count: 945

26/6/8 (Item 3 from file: 16)
05099188 Supplier Number: 47486464
Cardiothoracic Systems, Inc. - Company Report
June 24, 1997

26/6/10 (Item 5 from file: 16)
05044523 Supplier Number: 47405158
Heartport - Company Report
May 22, 1997

26/6/12 (Item 7 from file: 16)

04959651 Supplier Number: 47287428 (USE FORMAT 7 FOR FULLTEXT)
CardioThoracic Systems Announces Record First Quarter Results
April 10, 1997
Word Count: 1048

26/6/13 (Item 8 from file: 16)
04945318 Supplier Number: 47268349 (USE FORMAT 7 FOR FULLTEXT)
CardioThoracic Systems Announces First Quarter Revenues
April 2, 1997
Word Count: 683

26/6/15 (Item 10 from file: 16)
04807618 Supplier Number: 47073598 (USE FORMAT 7 FOR FULLTEXT)
CardioThoracic Systems Announces Fourth Quarter Results
Jan 28, 1997
Word Count: 1039

26/6/21 (Item 1 from file: 148)
10001128 SUPPLIER NUMBER: 20207454 (USE FORMAT 7 OR 9 FOR FULL TEXT)
CTS Announces All Claims Allowable for Its Mechanical Stabilization Patent
Feb 2, 1998
WORD COUNT: 476 LINE COUNT: 00044

26/6/22 (Item 2 from file: 148)
09991308 SUPPLIER NUMBER: 20188443 (USE FORMAT 7 OR 9 FOR FULL TEXT)
USS' Vascular Therapies Division Enters \$150 Million Cardiovascular Surgery
Cannula Market
Jan 26, 1998
WORD COUNT: 502 LINE COUNT: 00049

26/6/24 (Item 4 from file: 148)
09801782 SUPPLIER NUMBER: 19907411 (USE FORMAT 7 OR 9 FOR FULL TEXT)
CardioThoracic Systems Announces Third Quarter Results
Oct 21, 1997
WORD COUNT: 850 LINE COUNT: 00096

26/6/28 (Item 1 from file: 621)
01925905
Revolutionary Beating Heart Surgery to be Broadcast Live on the Web
July 26; Medtronic Octopus(R) 2 Tissue Stabilization System to be
Featured.
19990723, 1999
Word Count: 299

26/6/29 (Item 1 from file: 636)
04040687 Supplier Number: 53400329 (USE FORMAT 7 FOR FULLTEXT)
Product briefs.
June, 1998
Word Count: 3255

26/6/30 (Item 2 from file: 636)
03429846 Supplier Number: 47064406 (USE FORMAT 7 FOR FULLTEXT)
ISO 9000 & CE APPROVALS
Jan 25, 1997
Word Count: 43

26/6/32 (Item 2 from file: 441)
00007792 00000838 (USE FORMAT 7 OR 9 FOR FULLTEXT)
CardioThoracic Systems announces some revenue
17 April 1997 (19970417)
RECORD TYPE: FULLTEXT WORD COUNT: 308

26/6/34 (Item 4 from file: 441)
00007103 00000168 (USE FORMAT 7 OR 9 FOR FULLTEXT)
CardioThoracic Systems receives both ISO 9001 Certification and CE Mark
approval
23 January 1997 (19970123)
RECORD TYPE: FULLTEXT WORD COUNT: 204

26/6/35 (Item 5 from file: 441)
00006947 00000028 (USE FORMAT 7 OR 9 FOR FULLTEXT)
CardioThoracic Systems successfully completes Inaugural COR beating
heart surgery training
9 January 1997 (19970109)
RECORD TYPE: FULLTEXT WORD COUNT: 294

26/6/36 (Item 6 from file: 441)
00006635 00005182 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Research Medical to introduce disposable devices for minimally invasive
heart surgery
13 November 1996 (19961113)
RECORD TYPE: FULLTEXT WORD COUNT: 400

26/6/37 (Item 7 from file: 441)
00005983 00004461 (USE FORMAT 7 OR 9 FOR FULLTEXT)
CardioThoracic systems reaches clinical milestone
31 July 1996 (19960731)
RECORD TYPE: FULLTEXT WORD COUNT: 210

26/6/39 (Item 1 from file: 20)
03396049 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Two Silicon Valley Start-Ups Invent Heart-Surgery Techniques
November 09, 1998
WORD COUNT: 1957

26/6/41 (Item 3 from file: 20)
02574979 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Owners of Danville, Calif., Firm Seek Approval for Catheter System
August 21, 1998
WORD COUNT: 823

26/6/42 (Item 4 from file: 20)
02353592 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Computer Motion Establishes Loma Linda Medical Center as a Clinical Site
for Endoscopic Heart Surgery
July 29, 1998
WORD COUNT: 755

26/6/45 (Item 3 from file: 813)
1032414 SFW022
CardioThoracic Systems Successfully Completes Inaugural COR(TM) Beating
Heart Surgery Training

DATE: December 11, 1996
WORD COUNT: 765

26/6/46 (Item 4 from file: 813)
1031152 SFM023
Leading Cardiac Surgeons Gather for First National Training Conference on
New ' Beating Heart ' Surgery
DATE: December 9, 1996
WORD COUNT: 712

26/3,AB/1 (Item 1 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.
02346612
Minimally Invasive Cardiac Surgery (The global market for minimally invasive
cardiac surgery totaled \$100 mil in 1997, up from \$50 mil in 1996)
Medical & Healthcare Marketplace Guide, v 1, p I-585+
1998
DOCUMENT TYPE: Journal; Industry Overview (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 3505
ABSTRACT:
The global market for minimally invasive cardiac surgery totaled \$100 mil
in 1997, up from \$50 mil in 1996. In the US, the market increased from \$25
mil in 1996 to \$50 mil in 1997. According to the American Heart
Association, some 13.9 mil Americans have a history of coronary artery or
other heart disease. It was projected that 1.1 mil Americans will have a
new or recurrent coronary attack in 1998, with about 360,000 dying as a
result. The article discusses trends in the industry in more detail,
including the MIDCAB and OPCAB procedures. Additional information is provided.

26/3,AB/2 (Item 2 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.
02346611
Minimally Invasive Surgery - A General Overview (Part 2 of 2)
(A number of minimally invasive surgical procedures have been growing in
popularity, including endoscopic procedures)
Medical & Healthcare Marketplace Guide, v 1, p I-583+
1998
DOCUMENT TYPE: Journal; Industry Overview (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 3670
ABSTRACT:
A number of minimally invasive surgical procedures have been growing in
popularity, including endoscopic procedures. This portion of the article
discusses the MIDCAB procedure, the OPCAB procedure, port-access approach,
transmyocardial revascularization, percutaneous transluminal myocardial
revascularization, and trends in urology. The urology market is expected
to grow significantly over the next half-decade, due to the growth of the
60+ year age group in the US population. With a new generation of
laparoscopes is leading to the growth of that segment.
US Market for Endoscopic Products
Application 1997 Market Size (Estimated)
Laparoscopy* \$1,320 million
Arthroscopy 450 million

Urology	390 million
Gastroenterology	340 million
Gynecology	200 million
ENT	110 million

* Includes appendectomy, bowel resection, cholecystectomy, hernia repair, thorascopy and vagotomy.

The article discusses the trends in the industry in more detail, with a list of recent acquisitions in the minimally invasive surgery provided.

26/3,AB/3 (Item 3 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.
02295083

Two California-Based Start-Ups Invent Heart-Surgery Techniques (CardioThoracic Systems Inc will introduce equipment for use in stopped-heart valve replacement and defect repair surgery; company projects sales of about \$17 mil in 1998 and \$30 mil in 1999, vs \$9.3 mil in 1997)

San Jose Mercury News , p N/A

November 09, 1998

DOCUMENT TYPE: Regional Newspaper ISSN: 0747-2099 (United States)

LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 1974

ABSTRACT:

Two medical device start-ups have invented an entirely new industry that lets doctors mend ailing hearts using less traumatic techniques than required for traditional surgery. While surgeons have been slow to adopt the so-called minimally invasive procedures, the prospects for the potentially \$4 billion market appear to be so good that analysts expect a third and maybe even a fourth Silicon Valley start-up to enter the fray as early as next year. In addition, a growing number of established medical equipment makers are looking for ways to compete with industry inventors Heartport Inc. of Redwood City and CardioThoracic Systems Inc. of Cupertino. The battle currently revolves around two vastly different approaches. Heartport's \$5,000 surgical kit lets doctors stop the heart from inside the chest cavity and operate on it through a small "keyhole" incision between the ribs, eliminating the traditional need to saw through the breastbone and crack open the chest. **CardioThoracic Systems, or CTS, markets a \$1,900 stabilizing system that lets surgeons operate without ever stopping the heart. Although roughly 90 percent of such beating-heart surgeries still require opening the chest cavity, patients do not have to be placed on a heart-lung bypass machine, which has been suspected of causing brain damage in some cases. Neither CTS nor Heartport will acknowledge that it competes with the other. Both insist instead that each approach is appropriate for different types of patients.**

While that is true, both Heartport and CTS are working to persuade surgeons to adopt their approach for the world's most common heart surgery -- coronary artery bypass grafting. And CTS soon will begin treading on Heartport's exclusive territory when it introduces equipment next year intended for use in stopped-heart valve replacement and defect repair surgery. Half a dozen larger medical device companies have produced competing beating-heart stabilization kits, including U.S. Surgical, Medtronic Inc., Baxter International, Genzyme Corp., Guidant Corp. and Johnson & Johnson. But all of those companies combined account for only half the beating - heart surgical market; the other half belongs to CTS alone. CTS collected \$9.3 million in sales during 1997, its first year on the market, and expects to bring in about \$17 million in 1998. By next year

the company projects sales will grow to \$30 million, when the company hopes to begin breaking even.

26/3,AB/4 (Item 4 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.
02223872

Owners of Danville, Calif., Firm Seek Approval for Catheter System (Estech is seeking Food & Drug Administration approval for its new catheter; by the end of 1997, the catheter market grew to \$55 mil in bypass-surgery sales)

Contra Costa Times , p N/A

August 21, 1998

DOCUMENT TYPE: Regional Newspaper ISSN: 0192-6137 (United States)

LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 838

ABSTRACT:

Estech Inc is seeking Food & Drug Administration approval for its new \$1,500 catheter. The catheter market grew to \$55 million in bypass-surgery sales, representing more than 28,000 procedures, by the end of last year. More than 500,000 Americans each year have valve or bypass surgery.

26/3,AB/5 (Item 5 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.
01857450

The latest thing (Pros and cons of minimally invasive cardiac surgery, vs traditional heart bypass surgery techniques, are discussed)

Modern Healthcare, v 27, n 23, p 44+

June 09, 1997

DOCUMENT TYPE: Journal; Cover Story ISSN: 0160-7480 (United States)

LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 3076

ABSTRACT:

Minimally invasive cardiac surgery has gained praise for its reported lower cost and less invasive approach, vs traditional heart bypass surgery techniques, but there are those who feel that consumer demand is driving a technique that lacks solid clinical evidence of its effectiveness. **There are more than 300,000 bypass operations performed each year; less than 3,000 have been done using minimally invasive techniques, which have been widely available for only six months.** Proponents of the new approach say that it also shortens hospital stays, lowers treatment costs and increases patient satisfaction. The market for heart bypass and heart valve procedures is \$20 bil-plus per year. The full text furthers discusses the hope and hype surrounding minimally invasive cardiac surgery.

26/3,AB/6 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
05736759 Supplier Number: 50216342

OEC Medical Systems, Inc. & Genzyme Surgical Products Form Strategic

Alliance In Minimally Invasive Cardiovascular Surgery Market

PR Newswire, p731LAF006

July 31, 1998

Language: English Record Type: Fulltext

Article Type: Article

Document Type: Newswire; Trade

Word Count: 523

26/3,AB/9 (Item 4 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
05077116 Supplier Number: 47453150
The latest thing, Part 2
HENSLEY, SCOTT
Modern Healthcare, p44
June 9, 1997
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Professional
Word Count: 1549

26/3,AB/11 (Item 6 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
05014335 Supplier Number: 47363330
CardioThoracic Systems Introduces Next Generation Beating Heart System
PR Newswire, p0505SFM017
May 5, 1997
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 641

26/3,AB/14 (Item 9 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04924079 Supplier Number: 47238347
Columbia/HCA Surgeons Learn ' Beating Heart ' Surgery at Newest COR
Program From CardioThoracic Systems
PR Newswire, p0324NYM024
March 24, 1997
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 830

26/3,AB/16 (Item 11 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04783288 Supplier Number: 47040228
CardioThoracic Systems Receives Both ISO 9001 Certification and CE Mark
Approval to Market CTS MIDCAB System for Beating Heart Surgery
PR Newswire, p0115SFW015
Jan 15, 1997
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 717

26/3,AB/17 (Item 12 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04673037 Supplier Number: 46877564
Minimally Invasive Heart Surgery May Reduce Hospital Stays, Offer Greater
Patient Comfort, Study Indicates.
Business Wire, p11110182

Nov 11, 1996
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 799

26/3,AB/18 (Item 13 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04669228 Supplier Number: 46871670
Research Medical Inc. to introduce disposable devices for minimally
invasive heart surgery at Society of Thoracic Surgeons Meeting.
Business Wire, p11070061

Nov 7, 1996
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 783

26/3,AB/19 (Item 14 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04552845 Supplier Number: 46691791
CardioThoracic Systems and Tenet HealthSystem Collaborate on Physician
Training for New Coronary Bypass Surgery Technique.
Business Wire, p09090044

Sept 9, 1996
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 745

26/3,AB/20 (Item 15 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2002 The Gale Group. All rts. reserv.
04484621 Supplier Number: 46583774
CARDIOTHORACIC SYSTEMS INC. REACHES CLINICAL MILESTONE
PR Newswire, p730LATU014
July 30, 1996
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 654

26/3,AB/23 (Item 3 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2002 The Gale Group. All rts. reserv.
09991289 SUPPLIER NUMBER: 20188424 (USE FORMAT 7 OR 9 FOR FULL TEXT)
CTS Introduces New Application Specific Products for Multi-Vessel and
Single Vessel Beating Heart Bypass Procedures
PR Newswire, p126SFM020
Jan 26, 1998
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 638 LINE COUNT: 00058

26/3,AB/25 (Item 5 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2002 The Gale Group. All rts. reserv.
09730958 SUPPLIER NUMBER: 19758921 (USE FORMAT 7 OR 9 FOR FULL TEXT)
CardioThoracic Systems Launches ACCESS MV System

PR Newswire, p917SFW028
Sep 17, 1997
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 867 LINE COUNT: 00076

26/3,AB/26 (Item 6 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2002 The Gale Group. All rts. reserv.
09213575 SUPPLIER NUMBER: 19039432 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Indiana Heart Institute Hosts Two-Day Training on New ' Beating Heart '

Surgery
PR Newswire, p120SFM019
Jan 20, 1997
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1017 LINE COUNT: 00092

26/3,AB/27 (Item 7 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2002 The Gale Group. All rts. reserv.
08991194 SUPPLIER NUMBER: 18724452
Beating heart surgery cuts coronary by-pass morbidity.
Firn, David
Clinica, n722, p17(1)
Sep 9, 1996
ISSN: 0144-7777 LANGUAGE: English RECORD TYPE: Citation

26/3,AB/31 (Item 1 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS
(c) 2002 ESPICOM Bus.Intell. All rts. reserv.
00007947 00001119 (USE FORMAT 7 OR 9 FOR FULLTEXT)
CardioThoracic Systems introduces next generation beating heart system
Medical Device Companies Analysis
12 May 1997 (19970512)
RECORD TYPE: FULLTEXT WORD COUNT: 300
COMPANY: CardioThoracic Systems Inc

26/3,AB/33 (Item 3 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS
(c) 2002 ESPICOM Bus.Intell. All rts. reserv.
00007631 00000726 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Columbia/HCA surgeons learn 'beating heart ' surgery at newest COR
Program
Medical Device Companies Analysis
27 March 1997 (19970327)
RECORD TYPE: FULLTEXT WORD COUNT: 154
COMPANY: CardioThoracic Systems Inc; COR Institute

26/3,AB/38 (Item 8 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS
(c) 2002 ESPICOM Bus.Intell. All rts. reserv.
00002580 00009511 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Product News - Cardiothoracic Systems - Heart Bypass System
Medistat News
31 May 1997 (19970531)
RECORD TYPE: FULLTEXT WORD COUNT: 289

26/3,AB/40 (Item 2 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2002 The Dialog Corp. All rts. reserv.
03395835
Two California-Based Start-Ups Invent Heart-Surgery Techniques
Janet Rae-Dupree, San Jose Mercury News, Calif.
KRTBN KNIGHT-RIDDER TRIBUNE BUSINESS NEWS (SAN JOSE (CALIF.) MERCURY NEWS)
November 09, 1998
JOURNAL CODE: KSJM LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 1957

Nov. 9--Your heart, and how surgeons will operate on it, has become the Silicon Valley's latest technology battleground.

Two medical device start-ups have invented an entirely new industry that lets doctors mend ailing hearts using less traumatic techniques than required for traditional surgery.

26/3,AB/43 (Item 1 from file: 813)
DIALOG(R)File 813:PR Newswire
(c) 1999 PR Newswire Association Inc. All rts. reserv.
1049660 SFTH015
First Live Teleconference on New 'Beating Heart' Surgery
DATE: January 30, 1997 08:02 EST WORD COUNT: 710

26/3,AB/44 (Item 2 from file: 813)
DIALOG(R)File 813:PR Newswire
(c) 1999 PR Newswire Association Inc. All rts. reserv.
1046662 SFTH002A
Leading Cardiac Surgeons Gather for First European Conference on New 'Beating Heart' Surgery
DATE: January 23, 1997 08:02 EST WORD COUNT: 1,095

26/3,AB,K/47 (Item 5 from file: 813)
DIALOG(R)File 813:PR Newswire
(c) 1999 PR Newswire Association Inc. All rts. reserv.
0988461 LATU016
Columbia Good Samaritan Hospital Cardiac Surgeon First To Perform
MIDCAB(TM) Beating-Heart Bypass Surgery In Bay Area
DATE: August 27, 1996 08:32 EDT WORD COUNT: 726
...Invasive Direct Coronary Artery Bypass (MIDCAB(TM)) using the CTS MIDCAB(TM) System. This innovative beating heart surgery allows surgeons to perform coronary artery bypass without opening the entire sternum and stopping the...
...looks forward to working closely with Columbia Good Samaritan Hospital and expanding its minimally invasive beating heart surgery program to many more patients in the San Jose area."...

File 155:MEDLINE(R) 1966-2002/JAN W2

Set	Items	Description
S1	40	BEATING()HEART()SURGERY
S2	121505	BLOOD()FLOW
S3	2	S1 AND S2
S4	302	BEATING()HEART AND SU
S5	15	S2 AND S4
S6	14	S5 NOT S3

3/6, K/1

DIALOG(R) File 155:

11175080 21015008 PMID: 11131216

Coronary artery bypass grafting using a miniature right ventricular support system.

Nov 2000

... contorted. Excessive manipulation can lead to hemodynamic compromise as a result of partially obstructing pulmonary blood flow. A miniature extracorporeal system has been developed that uses right ventricular support and allows for...

...by a console positioned adjacent to the patient. **The centrifugal pump is capable of delivering blood flow at rates of 1-6 l/min. This extracorporeal system may be of benefit in maintaining adequate cardiac output during epicardial beating heart surgery.**

3/6, K/2

DIALOG(R) File 155:

10586745 20197926 PMID: 10731653

Micropumps to support the heart during CABG.

Feb 2000

... pressure: 561+/-271 vs. 947+/-316 mmHg/s, P=0.0074). After the procedure, subendocardial blood flow was significantly better in all areas of the left ventricle in group 2 (0.935...

... **supported heart is more resistant to repetitive local ischemia. Support by microaxial pumps can make beating heart surgery safer and applicable for more complex cases.**

6/6, K/2

DIALOG(R) File 155:

10859520 20532153 PMID: 11081903

Arteriotomy closure by glued patch in the porcine carotid artery.

Oct 2000

... of histotoxicity. Adhesives deserve to be reconsidered as an alternative to suturing in closed chest beating - heart coronary surgery.

; Blood Flow Velocity--physiology--PH; Carotid Arteries--pathology--PA; Carotid Arteries--surgery-- SU ; Swine; Vascular Patency--physiology--PH

6/6, K/3

DIALOG(R) File 155:

10788202 20452242 PMID: 10999613

Graft patency verification in coronary artery bypass grafting: principles and clinical applications of transit time flow measurement.

Sep 2000

The increasing popularity of beating - heart coronary surgery has raised concerns and doubts about the quality of the coronary anastomoses performed...

... time ultrasound based methods for graft-patency verification have been adopted in many centers during beating - heart and traditional bypass grafting. Although the results are very encouraging, correct interpretation of the flow...

; Anastomosis, Surgical; Blood Flow Velocity--physiology--PH; Equipment Design; Graft Occlusion, Vascular--physiopathology--PP; Graft Occlusion, Vascular--surgery-- SU ; Intraoperative Complications--physiopathology--PP; Intraoperative Complications--surgery-- SU ; Pulsatile Flow--physiology--PH; Reoperation; Sensitivity and Specificity

6/6,K/4
DIALOG(R) File 155:
10771646 20078712 PMID: 10613551
Beating heart axillocoronary bypass for management of the untouchable ascending aorta in coronary artery bypass grafting.
Nov 1999
... as an inflow vessel for venous coronary artery bypass grafts which were performed on the beating heart in order to achieve an aortic no touch concept. METHODS: The axillary artery was exposed...
Descriptors: Axillary Artery--surgery-- SU ; *Coronary Artery Bypass --methods--MT; *Coronary Disease--surgery-- SU ; Aged; Aorta, Thoracic; Aortic Diseases--complications--CO; Arteriosclerosis--complications--CO; Axillary Artery--ultrasonography--US; Blood Flow Velocity; Constriction ; Coronary Circulation; Coronary Disease--physiopathology--PP; Coronary Disease--ultrasonography--US; Echocardiography, Doppler, Pulsed...

6/6,K/6
DIALOG(R) File 155:
10111410 99236596 PMID: 10221407
Pulmonary embolectomy for acute massive pulmonary embolism under percutaneous cardiopulmonary support.
Feb 1999
... main pulmonary arterial root. The bypass circuit was kept closed, and used with the normothermic beating heart without converting to conventional total cardiopulmonary bypass. Blood flow from the lung was removed by pump suction, stored in the reservoir, and intermittently returned...
Descriptors: Cardiopulmonary Bypass--methods--MT; *Pulmonary Embolism --surgery-- SU

6/6,K/8
DIALOG(R) File 155:
09935025 98432606 PMID: 9761439
The effects of mechanical cardiac stabilization on left ventricular performance.
Sep 1998
OBJECTIVE: Mechanical cardiac stabilization is beneficial for precise coronary anastomoses on the beating heart. However, the effect of mechanical cardiac stabilization on hemodynamics, left ventricular performance, and the degree...
... Norwalk, CT) was positioned astride a segment of left anterior descending coronary artery (LAD). Coronary blood flow was measured by Doppler. Sonomicrometry crystals were placed distal to the stabilizer in a region...
...and x-intercept of the PRSW relationship) was unchanged. Blood pressure, heart rate, and LAD blood flow remained constant. Histologic findings included a layer of myocyte necrosis less than 1 mm in...
; Biopsy; Blood Flow Velocity; Coronary Artery Bypass --instrumentation--IS; Coronary Vessels--surgery-- SU ; Coronary Vessels --ultrasonography--US; Echocardiography, Doppler; Heart Ventricle--cytology --CY; Heart Ventricle--ultrasonography--US; Mechanics...

6/6,K/9
DIALOG(R) File 155:
09759125 98257221 PMID: 9594865
Vertical displacement of the beating heart by the octopus tissue

stabilizer: influence on coronary flow.

May 1998

BACKGROUND: In beating heart coronary artery bypass graft operations, biventricular pump failure, as observed after exposure of the posterior circumflex branches by sternotomy, may originate from mechanical obstruction to coronary flow. METHODS: Regional coronary blood flow was measured in 8 anesthetized, paced, beta-blocked pigs, and the beating heart was fully retracted. RESULTS: Displacement decreased cardiac output from 4.8 +/- 1.1 L/min...

... 6% (mean +/- standard error of the mean; $p < 0.001$) and a reduction in coronary blood flow in the left anterior descending coronary artery, the right coronary artery, and the circumflex coronary...

... ventricular preload pressures and restored cardiac output and mean arterial pressure as well as coronary blood flow. CONCLUSIONS: It is inferred that coronary blood flow was not mechanically obstructed during anterior displacement of the porcine beating heart, because augmentation of preloads by the maneuver of Trendelenburg restored coronary flow parallel to the...

...; MT; Coronary Vessels--pathology--PA; Head-Down Tilt; Myocardium--metabolism--ME; Oxygen Consumption; Sternum--surgery--SU; Stroke Volume; Swine; Thoracotomy--adverse effects--AE; Ventricular Function, Left; Ventricular Function, Right; Ventricular Pressure

6/6,K/10

DIALOG(R)File 155:

08308262 95093316 PMID: 8000270

Transmyocardial laser revascularization. Anatomic evidence of long-term channel patency.

1994

... revascularization techniques and to maximal medical therapy. During the operation, which is performed on the beating heart through a left thoracotomy, a high-energy CO2 laser is used to bore transmural channels... this interesting case and briefly discuss the anatomic and physiologic phenomena involved in establishing camerosinusoidal blood flow by use of transmyocardial laser revascularization.

Descriptors: Coronary Disease--surgery--SU; *Laser Surgery--methods--MT; *Myocardial Revascularization--methods--MT

6/6,K/11

DIALOG(R)File 155:

08057061 94356565 PMID: 8076098

Measurement of myocardial blood flow in coronary artery bypass surgery.

Oct 1993

It is now possible experimentally to measure myocardial blood flow of the beating heart using a helium-neon (He-Ne) laser Doppler flowmeter. A myocardial probe was redesigned to...

... modified laser flowmeter was used on 36 patients with ischaemic heart disease to measure myocardial blood flow before and after revascularization. Flow was measured in the right and left ventricles while patients...

... min per 100 g), which did not undergo revascularization, but mean(s.e.m.) myocardial blood flow at the ischaemic left ventricle increased significantly (from 68(15) to 88(13) ml/min...

... was also no significant difference between preoperative and postoperative values of haemodynamic parameters of coronary blood flow. In conclusion, a means to measure myocardial blood flow with He-Ne

laser Doppler flowmetry has been devised which shows coronary artery bypass grafting to increase myocardial blood flow in the ischaemic myocardium.

Descriptors: Angina Pectoris--surgery-- SU ; *Coronary Artery Bypass--instrumentation--IS; *Coronary Circulation--physiology--PH; *Intraoperative Complications--diagnosis--DI; *Laser-Doppler...

...; Intraoperative Complications--physiopathology--PP; Middle Age; Postoperative Complications--diagnosis--DI; Postoperative Complications--physiopathology--PP; Regional Blood Flow--physiology--PH

6/6,K/12

DIALOG(R) File 155:

08032710 93220633 PMID: 8465783

Adjustable tricuspid valve annuloplasty assisted by intraoperative transesophageal color Doppler echocardiography.

Apr 15 1993

... were studied intraoperatively by TEE. After cardiopulmonary bypass, the suture annuloplasty was adjusted on the beating heart until palpable regurgitation was eliminated. Further adjustment of the suture was performed under echocardiographic guidance...

Descriptors: Echocardiography, Doppler; *Heart Valve Prosthesis; *Monitoring, Intraoperative--methods--MT; *Tricuspid Valve--surgery-- SU ; *Tricuspid Valve Insufficiency--ultrasonography--US; Adult; Aortic Valve--surgery-- SU ; Echocardiography; Echocardiography, Doppler--methods--MT; Esophagus; Middle Age; Mitral Valve--surgery-- SU ; Regional Blood Flow ; Tricuspid Valve--physiopathology--PP; Tricuspid Valve--ultrasonography--US; Tricuspid Valve Insufficiency--physiopathology--PP; Tricuspid Valve Insufficiency--surgery-- SU

6/6,K/13

DIALOG(R) File 155:

07829202 91112878 PMID: 1989538

When do cerebral emboli appear during open heart operations? A transcranial Doppler study.

Feb 1991

...deairing procedures, the recordings indicated a large amount of emboli during filling of the empty beating heart in all 10 patients. Thus, this study indicates that cerebral emboli in open heart procedures...

... declamping the aorta is strongly advocated. In addition, a short period of filling of the beating heart before final closure of the aortic incision or vent may decrease the incidence of cerebral emboli. A concomitant reduction in cerebral blood flow by hyperventilation or anesthetics or both during filling of the empty beating heart may also be beneficial.

; Aortic Valve--surgery-- SU ; Cerebral Angiography; Embolism, Air--etiology--ET; Embolism, Air--radiography--RA; Intracranial Embolism and Thrombosis--etiology--ET; Intracranial Embolism and Thrombosis--radiography--RA; Mitral Valve--surgery-- SU ; Monitoring, Physiologic; Time Factors; Tomography, X-Ray Computed

6/6,K/14

DIALOG(R) File 155:

03477395 79230504 PMID: 313764

Effects of cardioplegic solution on human contractile element velocity.
Dec 1978

... aortic valve replacement (AVR) with cardioplegia; and 7 had AVR with coronary perfusion to the beating heart. For cardioplegia, a solution

9/7/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2002 Derwent Info Ltd. All rts. reserv.
013956140 **Image available**
WPI Acc No: 2001-440354/200147

Catheter system for facilitating epicardial surgery and intra-cardiac surgery, with aortic catheter coupled to a pump having an lumen to return drawn blood to the aorta of the beating heart at rate and pressure to perfuse the body

Patent Assignee: CHASE MEDICAL INC (CHAS-N)

Inventor: DAVIS A; SURESH M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6241699	B1	20010605	US 98121151	A	19980722	200147 B

Priority Applications (No Type Date): US 98121151 A 19980722

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6241699	B1	17	A61M-005/00		

Abstract (Basic): US 6241699 B1

NOVELTY - The system has at least one catheter to draw blood from the pulmonary veins of the beating heart. Each catheter has at least two distal ends adapted to be inserted into one of the pulmonary veins. Each of the distal ends has a balloon to occlude the vein, and a lumen terminating distal of the balloon for drawing blood from the respective pulmonary vein. A pump is coupled to the first catheter. **An aortic catheter coupled to the pump has a lumen and structure adapted to return the drawn blood to the aorta at a rate and pressure to perfuse the body.**

DETAILED DESCRIPTION - The several catheter systems which are provided achieve a left ventricular isolation and a right ventricular isolation as required to facilitate surgery. Myocardial infusion is provided in either ante-grade or retrograde flow to ensure the myocardium meets the oxygen demand.

An **INDEPENDENT CLAIM** is given for a **method of performing revascularization and intra-cardiac surgery on the beating heart**.

USE - For providing cardio-pulmonary bypass support and isolation of the heart during heart surgery, and specifically to facilitate intra cardiac surgery including valvular repair and/or replacement of the beating heart.

ADVANTAGE - Reduces trauma to the heart by keeping it beating. Allows repair of tricuspid valve and the pulmonic valve in the right side of the heart.

DESCRIPTION OF DRAWING(S) - The figure shows a sixth catheter system for drawing blood from the pulmonary veins to provide blood-less left ventricle of the heart to repair or replace the mitral valve and aortic valve.

aorta (12)
inferior/superior vena cava (18,20)
aortic base (24)
catheter (42)
balloon (48)
catheter (42,202)
occlusion balloons (208,210)
pp; 17 DwgNo 9/13

Derwent Class: P34

International Patent Class (Main): A61M-005/00

11/6,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:(c) 2002 Derwent Info Ltd. All rts. reserv.
013540327 **Image available**
WPI Acc No: 2001-024533/200103
Title Terms: FLEXIBLE; SUCTION; BODY; TREAT; SITE; SURFACE; EARTH; SUCTION;
CHANNEL; COMPRISE; SUCTION; PORT; ESTABLISH; VACUUM; BASE; EXPOSE; SITE
Abstract (Basic):

... the motion of an anastomotic site of a coronary artery on the
surface of a beating heart (claimed...

...of the invention holds an anastomotic site of a coronary artery
motionless for an off- pump bypass operation without inviting
deterioration of cardiac function during the operation caused by
application of...

Technology Focus:

... outer rim. The suction body is adapted for mounting at the tip
of an endoscopic catheter . Preferred Method: A formable detachable
handle locked into a fixed orientation with respect to the...

11/7/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2002 Derwent Info Ltd. All rts. reserv.
012374238 **Image available**
WPI Acc No: 1999-180345/199915

**catheter for posterior epicardial revascularization and inter cardiac
surgery on a beating heart**

Patent Assignee: CHASE MEDICAL INC (CHAS-N); DAVIS A (DAVI-I); SURESH M
(SURE-I)

Inventor: DAVIS A; SURESH M

Number of Countries: 023 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9904836	A1	19990204	WO 98US15005	A	19980722	199915 B
AU 9885763	A	19990216	AU 9885763	A	19980722	199926
US 6045531	A	20000404	US 9753416	A	19970722	200024
			US 98121617	A	19980722	
US 20010003795	A1	20010614	US 9753416	A	19970722	200135
			US 98121151	A	19980722	
			US 2001759727	A	20010112	

Priority Applications (No Type Date): US 9753416 P 19970722; US 98121617 A
19980722; US 98121151 A 19980722; US 2001759727 A 20010112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9904836	A1	E	37	A61M-001/36	
				Designated States (National): AU CA JP MX	
				Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE	
AU 9885763	A				Based on patent WO 9904836
US 6045531	A			A61M-029/00	Provisional application US 9753416
US 20010003795	A1			A61M-029/00	Provisional application US 9753416 Div ex application US 98121151

Abstract (Basic): WO 9904836 A1

NOVELTY - The system (30) comprises a catheter (32) with a shape
and structure that is adapted to **draw blood from a left ventricle or
the beating heart** . A pump is coupled to the catheter . An aortic
catheter is coupled to the pump (36) and has a lumen and structure

that is adapted to return the drawn blood to an aorta of the beating heart at a sufficient rate and pressure to perfuse the heart.

USE - For performing posterior epicardial revascularization and intracardia surgery on a beating heart .

ADVANTAGE - The device is able to isolate the left ventricle allowing it to be drained and facilitate valvular or posterior epicardial surgery on a beating heart .

DESCRIPTION OF DRAWING(S) - Catheter for facilitating intracardiac surgery.

catheter system, (30)

catheter , (32)

pump (36)

pp; 37 DwgNo 1/13

Derwent Class: P34

International Patent Class (Main): A61M-001/36; A61M-029/00

12/6, TI, K/3 (Item 3 from file: 350)

DIALOG(R) File 350: (c) 2002 Derwent Info Ltd. All rts. reserv.

013407283

WPI Acc No: 2000-579221/200054

Use of remifentanyl for reducing blood pressure, particularly in a patient suffering from pheochromocytoma, malignant hypertension, myocardial infarction or acute left ventricular failure

Extension Abstract:

... and place the patient onto an artificial breathing machine (ventilator). After exposing the patient's beating heart (by opening the patient's chest and spreading the rib cage apart), the patient's blood was then diverted into a heart-lung that would pump oxygenated blood around the patient's body. This enables the ventilator to be switched off...

12/6, TI, K/4 (Item 4 from file: 350)

DIALOG(R) File 350: (c) 2002 Derwent Info Ltd. All rts. reserv.

013294208

WPI Acc No: 2000-466143/200040

Anterior and inferior segment cardiac restoration apparatus

Abstract (Basic):

... the heart to reduce ventricular volume. Placement of the patch is facilitated by palpating a beating heart to identify akinetic, although normal appearing, tissue. An apical patch having an oval configuration facilitates...

... heart to a normal apical shape, which enhances muscle fiber efficiency and a normal writhing pumping action.

12/6, TI, K/5 (Item 5 from file: 350)

DIALOG(R) File 350: (c) 2002 Derwent Info Ltd. All rts. reserv.

013179934

WPI Acc No: 2000-351807/200031

Stabilizer for heart comprises pulse apparatus and at least one contact member attached to blood pump , leaves sections of the heart to rest

Abstract (Basic):

... the pulse apparatus. The pulse apparatus is brought into contact with the surface of the beating heart forming a stable section. The contact members are parallel and at a distance to one another, and the stabilizing unit has a vacuum and a blood pump e.g. axial pump , intra aorta balloon pump , rotation blood pump or Jarvik pump .

S12 36 S7 NOT S8
S13 48652 SURGERY OR SURGICAL
S14 122 S1(5N)S13
S15 35915 S2(S)S3
S16 41 S14 AND S15
S17 17 S10 AND S16
S18 17 IDPAT (sorted in duplicate/non-duplicate order)
S19 17 IDPAT (primary/non-duplicate records only)

19/TI/1 (Item 1 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
CANNULATION SYSTEM AND RELATED METHODS

19/TI/3 (Item 3 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
CANNULATION SYSTEM AND RELATED METHODS

19/TI/5 (Item 5 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
ENDOSCOPIC ARTERIAL PUMPS FOR TREATMENT OF CARDIAC INSUFFICIENCY AND
VENOUS PUMPS FOR RIGHT-SIDED CARDIAC SUPPORT

19/TI/6 (Item 6 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
SUPPLEMENTAL PORT FOR CATHETER PERFUSION OF SURGICAL SITE

19/TI/8 (Item 8 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
INTRAVASCULAR CANNULATION APPARATUS AND METHODS OF USE

19/TI/9 (Item 9 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
CATHETER DRUG DELIVERY SYSTEM AND METHOD FOR USE

19/TI/10 (Item 10 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
APPARATUS AND METHODS FOR ENTERING CAVITIES OF THE BODY

19/TI/11 (Item 11 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
APPARATUS FOR PROVIDING CORONARY RETROPERFUSION AND METHODS OF USE

19/TI/13 (Item 13 from file: 349)
DIALOG(R)File 349:(c) 2002 WIPO/Univentio. All rts. reserv.
DEVICE AND METHOD TO SLOW OR STOP THE HEART TEMPORARILY

19/3,AB/14 (Item 14 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2002 WIPO/Univentio. All rts. reserv.
00509516

**METHODS AND DEVICES PROVIDING TRANSMYOCARDIAL BLOOD FLOW TO THE ARTERIAL
VASCULAR SYSTEM OF THE HEART**

PROCEDES ET DISPOSITIFS ASSURANT UN FLUX SANGUIN TRANSMYOCARDIAQUE AU
SYSTEME VASCULAIRE ARTERIEL CARDIAQUE

Patent and Priority Information (Country, Number, Date):

Patent: WO 9940868 A1 19990819

Application: WO 99US3032 19990212 (PCT/WO US9903032)
Priority Application: US 9823492 19980213
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA
UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT
BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA
GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 20766
English Abstract

Methods and devices providing transmyocardial blood flow or coronary revascularization for the treatment of coronary atherosclerosis and resulting myocardial ischemia by increasing the flow of blood from one or more oxygenated blood sources within the patient to one or more sites selected in the arterial vascular system of the heart using a channel (42) for maintaining and regulating blood flow therebetween. **A valved conduit (48) or a self-maintained channel (42) is created between the left ventricle (20) reservoir of oxygenated blood and the coronary artery (26) distal to an area of obstruction by surgical and percutaneous methods.** Preferably, the conduit (48) or self-maintaining channel (42) integrally regulates the flow of blood between the oxygenated blood source and the site selected in the arterial vascular system of the heart wherein an increase in blood flow is desired.

19/3,AB/15 (Item 15 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2002 WIPO/Univentio. All rts. reserv.
00476002
COMPOSITIONS, APPARATUS AND METHODS FOR FACILITATING SURGICAL PROCEDURES
COMPOSITIONS, DISPOSITIF ET PROCEDES FACILITANT LES INTERVENTIONS
CHIRURGICALES
Patent Applicant/Assignee:
DUKE UNIVERSITY,
Inventor(s):
DUHAYLONGSOD Francis G,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9907354 A2 19990218
Application: WO 98US16469 19980807 (PCT/WO US9816469)
Priority Application: US 9755127 19970808
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ
VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH
CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW
ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 22920
English Abstract

Methods are provided for conducting surgical procedures in a patient wherein, during the surgical procedure, autonomous ventricular electrical conductivity and escape beats are reversibly and transiently suppressed to facilitate the surgical procedure. Also provided are compositions which are capable of inducing ventricular asystole in a patient. The compositions may include an AV node blocker. In one embodiment, compositions including an atrioventricular (AV) node blocker and a

beta-blocker are provided, wherein the beta-blocker is present in an amount sufficient to substantially reduce the amount of AV node blocker required to induce ventricular asystole in the patient. The compositions and methods may be used for inducing temporary ventricular asystole in a beating heart, and to facilitate the performance of a variety of surgical techniques, including minimally invasive microsurgical techniques. Methods for performing a surgical procedure on a human patient are provided wherein a composition capable of inducing transient reversible ventricular asystole is administered to the heart, for example by intracoronary injection. The heart then is electrically paced using an electrical pacing system, thereby to maintain the patient's blood circulation. The electrical pacing is then selectively intermittently stopped to allow ventricular asystole to occur, and the steps of the surgical or therapeutic procedure, such as suturing, are conducted during the time that the electrical pacing is intermittently stopped. The methods and compositions advantageously may be used in a range of different surgical procedures including cardiac, vascular and neurosurgical procedures.

19/3,AB/16 (Item 16 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2002 WIPO/Univentio. All rts. reserv.
00473484

CATHETER SYSTEM AND METHOD FOR POSTERIOR EPICARDIAL REVASCULARIZATION AND INTRACARDIAC SURGERY ON A BEATING HEART
SYSTEME DE CATHETERS ET PROCEDE POUR LA REVASCULARISATION EPICARDIQUE POSTERIEURE ET LA CHIRURGIE INTRACARDIAQUE SUR UN COEUR BATTANT
Patent and Priority Information (Country, Number, Date):
Patent: WO 9904836 A1 19990204
Application: WO 98US15005 19980722 (PCT/WO US9815005)
Priority Application: US 9753416 19970722
Designated States: AU CA JP MX AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English
Fulltext Word Count: 6838
English Abstract

A catheter system and method of performing posterior epicardial revascularization and intracardiac **surgery on a beating heart**. Several catheter systems are provided to **achieve a left ventricular isolation and a right ventricular isolation** as required to facilitate surgery according to the methods of the present invention. Myocardial infusion is provided in either antegrade or retrograde flow to insure the myocardium meets its oxygen demand.

19/3,AB/17 (Item 17 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2002 WIPO/Univentio. All rts. reserv.
00398005

CATHETER SYSTEM FOR SURGICAL ACCESS AND CIRCULATORY SUPPORT OF THE HEART
SYSTEME CATHETER PERMETTANT D'ACCEDER AU COEUR POUR DES BESOINS CHIRURGICAUX ET DE FOURNIR AU COEUR UNE ASSISTANCE CIRCULATOIRE
Patent Applicant/Assignee:
CARDEON CORPORATION,
MACOVIAK John A,
Inventor(s):
MACOVIAK John A,

28/7/4 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.
07221023 EMBASE No: 1998120380

Coronary surgery on a beating heart during mechanical left cardiac assist device support (SUPPCAB)

KORONARCHIRURGIE AM SCHLAGENDEN HERZEN WAHREND MECHANISCHER LINKSHERZASSISTENZ (SUPPCAB)

Waldenberger F.R.; Haisjackl M.; Lengsfeld M.; Holinski S.; Konertz W.
Prof. W. Konertz, Universitätsklinik für Herzchirurgie,
Universitätsklinikum Charité, Schumannstrasse 20-21, D-10117 Berlin Germany
AUTHOR EMAIL: cardiac@zr.charite.hu-berlin.de
Acta Chirurgica Austriaca (ACTA CHIR. AUSTRIACA) (Austria) 1998, 30/1 (16-19)
CODEN: ACAUB ISSN: 0001-544X
DOCUMENT TYPE: Journal; Article
LANGUAGE: GERMAN SUMMARY LANGUAGE: GERMAN; ENGLISH
NUMBER OF REFERENCES: 16

Background: In coronary surgery there exist 2 possible ways to approach reduction of invasiveness: 1) surgical access, and 2) heart lung machine (HLM). Methods: Between October 1st, 1994 and April 30th, 1997, we performed coronary surgery in 116 patients on a beating heart under LVAD (left ventricular assist device) support. After routine midline sternotomy, left atrium and ascending aorta were cannulated and centrifugal pumps were employed for mechanical circulatory assistance. During LVAD support we administered Esmolol(R) for reduction of cardiac work. Results: Retrospectively we divided the patients into 3 groups according to ejection fraction (EF) and urge of operation. The predicted perioperative mortality (ppm) was calculated according to the Parsonnet score. Group I (EF > 35%): n = 70, perioperative mortality (pom): 4.3% (n = 3), ppm: 9 +/- 8%. Group II (EF <= 35%): n = 29, pom = 6.9% (n = 2), ppm: 10 +/- 6%. Group III (infarction within the preoperative week and/or emergency operation): n = 17, pom = 23.5% (n = 4), ppm: 27 +/- 18%. We performed 176 anastomoses on a beating heart, which means an average of 1.5 +/- 0.6 distal anastomoses per patient. Conclusions: In our view, coronary artery bypass grafting during LVAD support without heart lung machine and cardioplegia is a safe procedure for revascularization of the anterior and lateral wall as well as the right coronary artery area.

File 98:General Sci Abs/Full-Text 1984-2001/Nov
File 9:Business & Industry(R) Jul/1994-2002/Jan 02
File 16:Gale Group PROMT(R) 1990-2002/Jan 04
File 160:Gale Group PROMT(R) 1972-1989
File 148:Gale Group Trade & Industry DB 1976-2002/Jan 03
File 621:Gale Group New Prod. Annou. (R) 1985-2002/Jan 04
File 636:Gale Group Newsletter DB(TM) 1987-2002/Jan 04
File 441:ESPICOM Pharm&Med DEVICE NEWS 2002/Dec W3
File 20:Dialog Global Reporter 1997-2002/Jan 07
File 813:PR Newswire 1987-1999/Apr 30
File 15:ABI/Inform(R) 1971-2002/Jan 05
File 88:Gale Group Business A.R.T.S. 1976-2002/Jan 04

Set	Items	Description
S1	3110	BEATING()HEART
S2	481104	PUMP???
S3	497274	CONDUIT? ? OR STENT? ? OR CATHETER? ? OR TUBE? ? OR TUBING
S4	674665	LEFT AND RIGHT

of 5% dextrose in 0.2% saline at 4 degrees C...

... is consistent with previous suggestions that this combination is detrimental because of maldistribution of coronary blood flow during ventricular fibrillation.

; Aortic Valve--surgery-- SU ; Coronary Artery Bypass; Heart Arrest, Induced--adverse effects--AE; Heart Function Tests; Heart Valve Prosthesis...

6/7/1

DIALOG(R) File 155:MEDLINE(R)

11266275 21176129 PMID: 11279407

Repair of dyskinetic or akinetic left ventricular aneurysm: results obtained with a modified linear closure.

Mickleborough LL; Carson S; Ivanov J

University of Toronto, 200 Elizabeth Street, Toronto, Ontario, M5G 2C4 Canada.

Journal of thoracic and cardiovascular surgery (United States) Apr 2001, 121(4) p675-82, ISSN 0022-5223 Journal Code: K9J

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

OBJECTIVE: In patients with a dyskinetic or akinetic area of the left ventricle, controversy exists over who will benefit from resection. This study evaluates results achieved with a modified linear closure in 193 of 196 consecutive cases. Preoperative cases (n = 160 [83%]) were in functional class III or IV with congestive heart failure (n = 115 [60%]), angina (n = 108 [56%]), and syncope (n = 67 [35%]). The ejection fraction was 25% +/- 8%, and echocardiography showed significant mitral regurgitation in 86 (45%) patients. In patients with detailed wall motion analysis, 50 (57%) were akinetic, and 37 (43%) were dyskinetic. **METHODS:** **Repair was completed on the beating heart to minimize ischemia and allow assessment of wall function and viability to guide resection and repair.** Additional procedures included coronary artery bypass grafting (n = 175 [91%]), septoplasty (n = 24 [12%]), and arrhythmia ablation (n = 77 [40%]). Ventricular and mitral valve function were assessed by means of preoperative and/or postoperative gated acquisition scans in 171 (90%) patients and Doppler echocardiograms in 170 (88%) patients. **RESULTS:** Hospital mortality was low (5/193 [2.6%]), although 34 (18%) patients needed perioperative intra-aortic balloon pump support. Actuarial survival at 1 and 5 years was 91% and 84%. Most late deaths were due to congestive heart failure. Seven patients required transplantation (interval, 36 +/- 32 months). As determined by multivariable analysis, factors predicting poor outcome at 5 years were preoperative mitral regurgitation of 2+ or greater, congestive heart failure, and ventricular tachycardia. Among survivors, 126 (80%) of 157 were in functional class I or II, and the average increase in ejection fraction postoperatively was 9.1% +/- 10.0%. Postoperative echocardiograms in 70 patients with significant mitral regurgitation preoperatively showed improved valve function in 40 (57%) of 70 patients. **CONCLUSIONS:** We conclude that repair of dyskinetic or akinetic aneurysms by means of a modified linear closure plus septoplasty in selected patients can be accomplished in the beating heart with low operative mortality, provides good symptomatic relief and long-term survival, and is associated with objective evidence of improved left ventricular and mitral valve function.

Record Date Created: 20010330

6/7/5

DIALOG(R) File 155:MEDLINE(R)

10354207 20013845 PMID: 10546522

Flow measurements through aortocoronary and intraluminal coronary shunts.

Jaggy C; Lachat M; Leskosek B; Kunz M; Zund G; Turina M

Clinic for Cardiovascular Surgery, University Hospital Zurich.

Swiss surgery (SWITZERLAND) 1999, 5 (5) p228-32, ISSN 1023-9332

Journal Code: CDJ

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

AIMS: Temporary insertion of shunts during coronary artery bypass grafting (CABG) on the beating heart may provide the minimal flow required for adequate myocardial protection (40 to 60 ml/min). We investigated the flow as a function of the pressure head over three aortocoronary shunts and one intraluminal coronary shunt. METHODS: The aortocoronary shunts (VS-01590 with bulb size 2, 3 and 4 mm) and the intraluminal shunt (IVS-4030, bulb size 4 mm) were perfused with 47% glycerin solution at 37 degrees C. The preload was raised in 5 mmHg steps from 35 to 80 mmHg. The afterload was set at 12 mmHg. A regression analysis of the flow on the pressure head was performed. RESULTS: For maximal preload the flow through the aortocoronary shunts was 15.9 +/- 1.3, 46.2 +/- 2.2 and 75.4 +/- 3.3 ml/min, for the intraluminal shunt it was 76.1 +/- 3.4 ml/min. To provide a flow of 40 ml/min a preload of 70, 50 and 45 mmHg was necessary for the 3 mm and 4 mm aortocoronary shunt and the intraluminal shunt respectively. For the aortocoronary and the intraluminal shunts the beta-coefficients were 0.27, 0.66, 1.13 and 1.02 ml/(min*mmHg) respectively with all p < 0.0001. CONCLUSIONS: For adequate pressure head the 3 mm and 4 mm aortocoronary shunt and the intraluminal shunt provide myocardial protection. In case of severe proximal coronary stenosis the intraluminal shunt will not guarantee myocardial protection and main benefit reduces to working in a bloodless field. The insertion of shunts is a cheap and simple method to optimize CABG on the beating heart.

Record Date Created: 19991118

6/7/7

DIALOG(R) File 155:MEDLINE(R)

10084231 99184336 PMID: 10086532

Beating heart coronary surgery supported by an axial blood flow pump.

Lonn U; Peterzen B; Carnstam B; Casimir-Ahn H

Linkoping Heart Center, University Hospital, Sweden.

Annals of thoracic surgery (UNITED STATES) Jan 1999, 67 (1) p99-104, ISSN 0003-4975 Journal Code: 683

Languages: ENGLISH

Document type: Clinical Trial; Journal Article; Randomized Controlled Trial

Record type: Completed

BACKGROUND: We have previously presented a method for performing coronary artery bypass graft operation on the beating heart without cardiopulmonary bypass (CPB). This method has now been explored. METHOD: Thirty-two patients were prospectively randomized. The study group was operated on using an axial blood flow pump (Hemopump; HP) as circulatory support. Operations were performed on the beating heart.

The control group was operated on using CPB, aortic cross-clamping, and cardioplegic arrest. **RESULTS: All patients went through the procedure without major complications, and were discharged from the hospital. No statistical differences were observed between the groups for time on support (HP, 60.5 minutes; CPB, 70.5 minutes) or total operating time (HP, 178 minutes; CPB, 162 minutes). The number of grafts was greater in the CPB**

group (HP, 1.8; range, 1 to 3; CPB, 2.5; range, 1 to 4; $p = 0.03$). Statistical differences were found for intraoperative bleeding (HP mean, 312 mL; CPB mean, 582 mL; $p = 0.0003$) and myocardial trauma as measured by postoperative troponin-T values (HP, 0.23 microg/L; CPB, 1.17 microg/L; $p = 0.004$). **CONCLUSIONS: Hemopump-supported coronary artery bypass graft operation has been shown to be a safe and feasible procedure with the potential benefits of reduced operative bleeding and myocardial damage without prolonging intraoperative support or total operating time.**

Record Date Created: 19990414

File 155:MEDLINE(R) 1966-2002/JAN W2
File 5:Biosis Previews(R) 1969-2001/Dec W5
File 73:EMBASE 1974-2002/Dec W5
File 34:SciSearch(R) Cited Ref Sci 1990-2002/Jan W1
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

Set	Items	Description
S1	20	AU="ABOUL-HOSN W":AU="ABOUL-HOSN WALID NAJIB"
S2	5	AU="KANZ W":AU="KANZ WILLIAM RUSSELL"
S3	21	S1:S2
S4	11	S3/2000 OR S3/2001
S5	2364842	PY=1999
S6	10	S3 NOT S4:S5
S7	8	RD (unique items)

7/7/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
08118747 94163672 PMID: 8118860

Mechanical left ventricular unloading during high risk coronary angioplasty: first use of a new percutaneous transvalvular left ventricular assist device.

Scholz KH; Figulla HR; Schweda F; Smalling RW; Hellige G; Kreuzer H; Aboul-Hosn W ; Wampler RK

Department of Cardiology, Georg-August-University, Gottingen, Germany.

Catheterization and cardiovascular diagnosis (UNITED STATES) Jan 1994,

31 (1) p61-9, ISSN 0098-6569 Journal Code: CQZ

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

A new catheter mounted, transvalvular left ventricular assist device has been designed for percutaneous transfemoral access. The device, the Hemopump [14 French (Fr.) outer diameter], is based on a mixed flow rotary pump and is capable of flow rates of 1.5-2.2 l/min. The pump is inserted using a specialized 16 Fr. femoral introducer sheath. The first application of the percutaneous Hemopump in man was performed in two patients with hemodynamic compromise during high risk coronary angioplasty. In these patients, Hemopump support resulted in hemodynamic stabilization (increase in aortic pressure from 60/42 to 87/61 and from 80/60 to 100/70 mm Hg, respectively) and marked left ventricular unloading (decrease in pulmonary capillary wedge pressure from 25 to 10 and from 14 to 10 mm Hg) during balloon inflation. In both patients, percutaneous transluminal coronary angioplasty (PTCA) could be accomplished successfully. Using the system for periods of about 2 hr in each patient, we observed no vascular, hemorrhagic, or embolic complications. In both patients, only a minor increase in both plasma free hemoglobin and lactate dehydrogenase levels was noted. Our preliminary experiences suggest that the percutaneous Hemopump is safe and effective and may be a powerful alternative to other

devices used for supported angioplasty.

Record Date Created: 19940406

7/7/2 (Item 2 from file: 155)

DIALOG(R) File 155: MEDLINE(R)

07980903 94093077 PMID: 8268532

The Sternotomy Hemopump. A second generation intraarterial ventricular assist device.

Wampler RK; Aboul-Hosn W ; Cleary M; Saunders M

Johnson and Johnson Interventional Systems, Rancho Cordova, CA 95670.

ASAIO journal (UNITED STATES) Jul-Sep 1993, 39 (3) pM218-23, ISSN 1058-2916 Journal Code: BBH

Languages: ENGLISH

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The first generation Hemopump is a VAD based on a catheter mounted intraarterial axial flow blood pump that is placed through the femoral artery. Blood is withdrawn from the left ventricle through a transvalvular inflow cannula and pumped into the aorta. Clinical trials have demonstrated hemodynamic efficacy, improved survival, and low hemolysis in cardiogenic shock. The incidence of non-insertion of the device and fracture of the flexible drive cable limited its utility, however. In addition, some processes used in pilot production could not be adapted to volume manufacturing. A second generation device, the Sternotomy Hemopump, has been developed for insertion through the ascending aorta. Design changes include a shortened inflow cannula, higher flow hydraulics, and a more durable flexible drive cable. In addition, more efficient manufacturing processes were implemented. In a pulsatile mock loop the flow was 5.7 L/min at 100 mmHg. In vivo experiments of up to 2 weeks demonstrated a mean plasma free hemoglobin of 8.7 mg/dl, minimal valve injury, and an acceptable incidence of renal infarction. In vitro endurance demonstrated a 7 day reliability of 99.9% with a 95% confidence. A new clinical trial will evaluate the use of the Sternotomy Hemopump for nonoxygenator support during aorto-coronary artery bypass surgery.

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Left ventricular unloading during high risk coronary angioplasty: First use of percutaneous Hemopump.

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